

PLANT & ANIMAL CELL LAB

PRELAB:

- Study:
 - how to use a microscope
 - how to prepare a wet mount
 - how to draw biological drawings
- Review procedure for this lab
- Prepare biological diagram sheets for both cells

PURPOSE: To examine the structures of actual plant and animal cells.
To compare cell structures seen using the light microscope to structures in the textbook.

MATERIALS: microscope
two glass slides
two cover slips
dropper
onion
toothpick
iodine stain
methylene blue stain

METHODS:

Preparing Plant Cell (Onion) Wet Mount

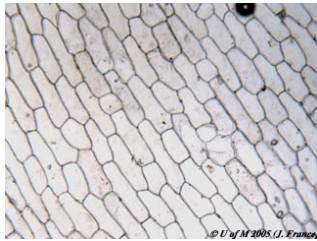
1. Obtain a slide and cover slip. Clean with lens paper if necessary.
2. Obtain onion tissue by peeling off the skin.
3. Prepare the wet mount using the procedure in your notes. (*Place the piece of onion on a glass slide and add a drop or two of the iodine solution. Cover the slide with a cover slip*)
4. Place wet mount on the stage of the microscope.
5. Observe the onion tissue with the microscope using the procedure in your notes.
6. Draw a biological drawing of the onion tissue. Label all the structures you see.
7. Complete all magnification calculations of the biological drawing.
8. Clean the slide and cover slip with water. Dispose onion tissue in garbage can.
9. Return all materials and clean up lab station.

Preparing Animal Cell (Cheek) Wet Mount

1. Obtain a slide and cover slip. Clean with lens paper if necessary.
2. Obtain cheek tissue by scratching the inside of your mouth (cheek area) with a toothpick.
3. Prepare the wet mount using the procedure in your notes. (*Gently tap the toothpick onto the center of a glass slide. Some of the cheek cells should fall onto the slide. Add a drop of methylene blue stain (specific for animals) and cover with a cover slip*).
4. Place wet mount on the stage of the microscope.
5. Observe the cheek cells with the microscope using the procedure in your notes.
6. Draw a biological drawing of the cheek cells. Label all the structures you see.
7. Complete all magnification calculations of the biological drawing.
8. Clean the slide and cover slip with water.
9. Return all materials and clean up lab station.

OBSERVATIONS: No need to make observation tables. Make biological drawings of each cell type.

PLANT CELL 4x



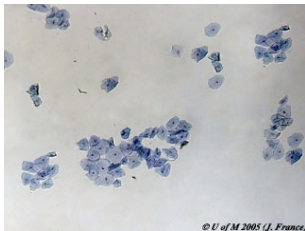
PLANT CELL 10x



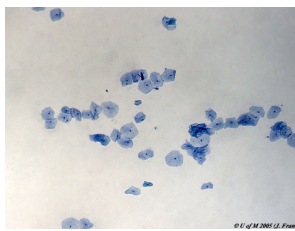
PLANT CELL 40x



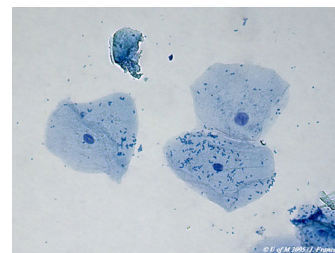
CHEEK CELL 4x



CHEEK CELL 10x



CHEEK CELL 40x



ANALYSIS:

1. Include biological drawings of both cell types with all appropriate magnification calculations (10x, 40x Objectives) (Magnification Calculation: diameter of field of view/number of times object fits across field of view)

Plant cell Objective 10x

Magnification Calculation = $2.0 \text{ mm} / 10 \text{ cells across} = 0.2 \text{ mm per onion skin cell}$

Cheek cell Objective 40x

Magnification Calculation = $0.4 \text{ mm} / 7 \text{ cells across} = 0.06 \text{ mm per human cheek cell}$

SAFETY CONSIDERATIONS:

1. Students need to be very careful when scraping the inside lining of their cheek. Emphasize that a gentle scrape will do and there is no need to gauge the inside lining of their cheek. You do not want blood all over the lab equipment.
2. Students must also be using clean toothpicks to swab their cheeks for health concerns.
3. Students need to be very careful when dealing with the iodine and the methylene blue stain.